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College information management system

Research Proposal · March 2024

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1. INTRODUCTION

This project is aimed at developing a **College Management Information System (CMIS)** that is of importance to either an educational institution or a college. It is difficult to prepare the manual work to store the information about the all students, teachers as well as about workers. This system can be used as a knowledge/information management system for the college. So this project helps to store those type of information using computerized system.

The title of the project is “COLLEGE MANAGEMENT INFORMATION SYSTEM” (CMIS). CMIS is an Intranet based application that aims at providing information to all the levels of management within an organization. This system can be used as a information management system for the college.

The front-end will be HTML pages with Java Script for client side validation where as all business logics will be in Java reside at middle layer. And these layers will interact with third layer of database, which will be MS-access database. The web server will be Glassfish. To start working on this project environment required is a server having Glassfish as web server, MS-access as database and Java Runtime Environment (JRE) as development environment.

The project is divided into 6 scenarios; each scenario can be developed independently and knowledge of JSP with MS-access is desirable to execute this project.

2. PROJECT OVERVIEW

This document is the Software Requirement Specification (SRS) for the College Management Information System project. The purpose of this document is to describe the functionality, requirements and general interface of the CMIS.

2.1. Literature Review

Whenever we implement new system it is developed to remove the shortcomings of an existing system. The computerized has more Edge over the manual system. As we are doing a project on “COLLEGE MANAGEMENT” So firstly we will introduce the existing system, the existing system is based on manual system, which takes lot of time to get performance of the test. We have developed new system, which is based on computer in which work is done very easily. It is most reliable & time saving system while conducting some manual work.

2.2. SCOPE FOR DEVELOPMENT OF THIS PROJECT:

The requirement of the user is to:

- Access/ Search information.
- Login to the system through the first page of the application
- View/insert his/her details.
- Can get help through the help option to insert/view different features of the system.
- The system should give the information of Departments.
- The system should give the information of Library.
- The system should give the information of Labs.
- The system should give the information of College Events.

- An admin login should be present who can read as well as remove any uploads

2.3. DEFINITIONS ,ACRONYMS & ABBREVIATIONS:

Browser	Software used to view hypertext documents. Internet Explorer and Netscape Navigator are examples of browsers.
Click or Command Click	Refers to the user pressing a mouse button to select an object or cause some action to occur. On right-handed mice with more than one button, it usually means to press the leftmost button.
HTML	Hypertext Markup Language is a specification for graphical layout of a document. The specification calls for the document to be stored as text containing a series of tags that contain formatting information.
Java	A programming language used to implement source code of our project.
User Friendly	Designed to be easy to use. Simple, practicable, accommodating, understandable and accessible.
MS-access	MS-access database is a collection of data treated as a unit. The purpose of a database is to store and retrieve related information.
JSP	Java Server Page (JSP) is a technology for controlling the content or appearance of Web pages through the use of servlet, small programs that are specified in the Web page and run on the Web server to modify the Web page before it is sent to the user who requested it.

2.4. OVERVIEW OF DOCUMENT:

This document describes the product and its requirements and constraints. It provides a primarily non-technical description of the project targeted towards external audiences. This section includes information such as data requirements, functional requirements, and a general description of the product and its interaction with users from the perspective of the client. Section 3 provides specific technical requirements as the team understands them at this time and is intended for an internal audience. This section includes information such as external interface requirements, performance requirements, and any other technical requirements needed to design the software.

2.5. GENERAL DESCRIPTION:

2.5.1. User Characteristics:

The target audience for **CMIS** product is the college students/staff (Technical/Non-technical) .The users for this system is

- Administrator – The Super user of the system.

2.5.2. Product Perspective:

The product will be a standalone application and may be run on multiple systems within an Intranet network. The product will require a keyboard, mouse and monitor to interface with the users. The minimum hardware requirements for the product are specified in this document.

2.5.3 Overview of Functional Requirements:

The client requires the following features:

- Access/ Search information.

- Login to the system through the first page of the application
- View/insert his/her details.
- Can get help through the help option to insert/view different features of the system.
- The system should give the information of Departments.
- The system should give the information of Library.
- The system should give the information of Labs.
- The system should give the information of College Events.
- Students can give feedback on college/staff/any other student.
- An admin login should be present who can read as well as remove any uploads

2.5.4: Non functional requirements

Client:

Hardware platform:

PIII or above with RAM of 128 or above MB and 20GB or above of HD.

Software Platform: Java Enabled Browser

Server:

Hardware Platform:

PIII or above with RAM of 128 or above MB and 20GB or above of HD.

Software Platform:

- DATABASE-(MS-ACCESS)
- JAVA
- HTML
- JAVA-SCRIPT

- Windows-XP

2.6. SPECIFIC REQUIREMENTS:

2.6.1 External Interface Requirements:

- Simple, Attractive, User Friendly
- Self-Contained, Consistent, Self-Explanatory
- Robust.

2.6.2 Detailed Description of Functional Requirements:

Administrator Configuration Screen:

Purpose	Allows administrator to add/remove student/staff records
Inputs	Student/staff/Departments/Library Details
Processing	Add/remove student/staff entries in database
Outputs	Updated records.

Admin Configuration Screen

3. SYSTEM DESIGN

3.1 PURPOSE:

Purpose of **College Management Information System (CMIS)** Design Document is to describe the design and the architecture of **CMIS**. The design is expressed in sufficient detail so as to enable all the developers to understand the underlying architecture of **CMS**. Logical architecture of **JDBC** driver, Server, **DML**, **DDL**, Session and Data Store are explained.

3.2 TARGET AUDIENCE:

This Design document is intended to act as a technical reference tool for developers involved in the development of **College Management System (CMS)**.

This document assumes that you have sufficient understanding of the following

Concepts:

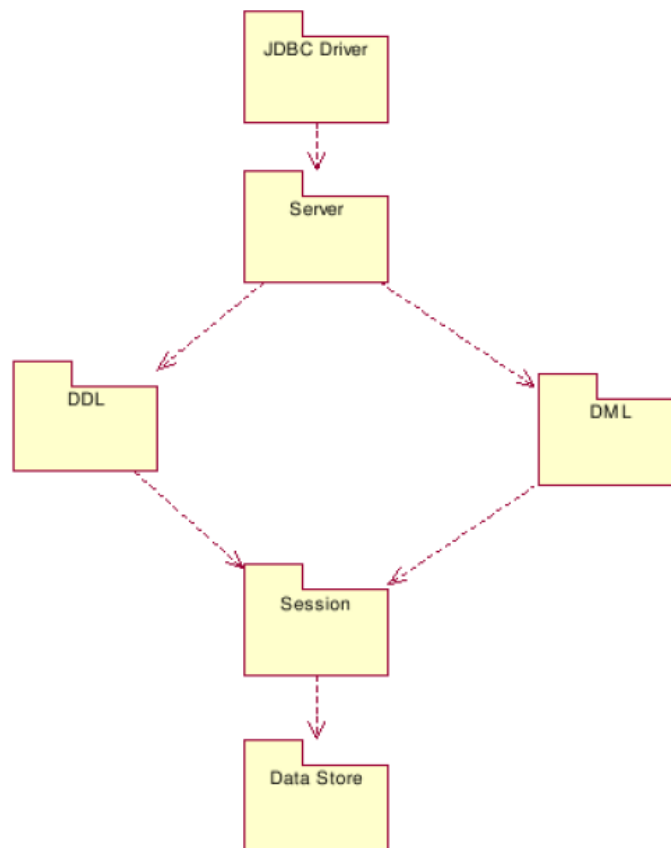
- RDBMS and its various component modules.
- SQL
- Java and JDBC
- Interaction Diagrams
- Classes and Interfaces

3.3 PRE-REQUISITES:

CMS requires Java **JRE** 1.5 or higher. Since **CMS** is written in Java, it can run on any platform that supports the Java runtime environment 1.5 or higher. The compiled files are contained in Java Archives (**JAR**'s) and have to be defined in the CLASSPATH environment variable.

3.4 TOP LEVEL INTERACTION DIAGRAM:

Logical architecture of **JDBC** driver, Server, **DML**, **DDL**, Session and Data Store

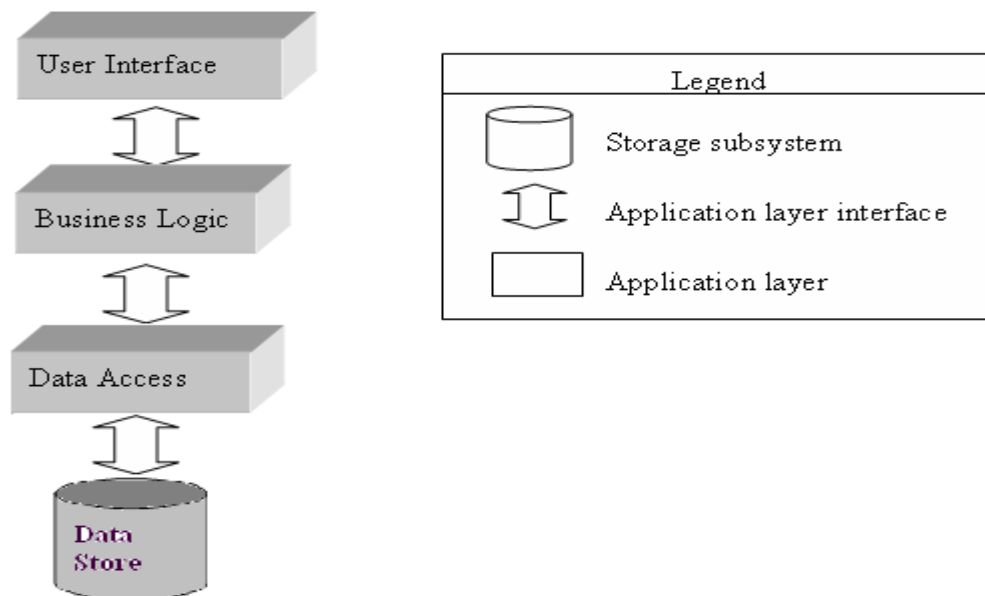


Interaction Diagram

3.5 ARCHITECTURAL STRATEGIES:

The architectural design of a software project is simply the design of the entire software system. This includes the hierarchy of the modules and also which modules are present in the system. A good architectural design will create a clear and fair balance between cohesion (each module has only one distinct purpose), coupling (no two modules depend completely on each other), abstraction (seeing modules in full and not in detail), hierarchy (logical modules stem from others) and partitioning (logically grouping modules together) of the software modules.

3.6. Logical View: it provides the user with an abstract view of the overall system functionality.



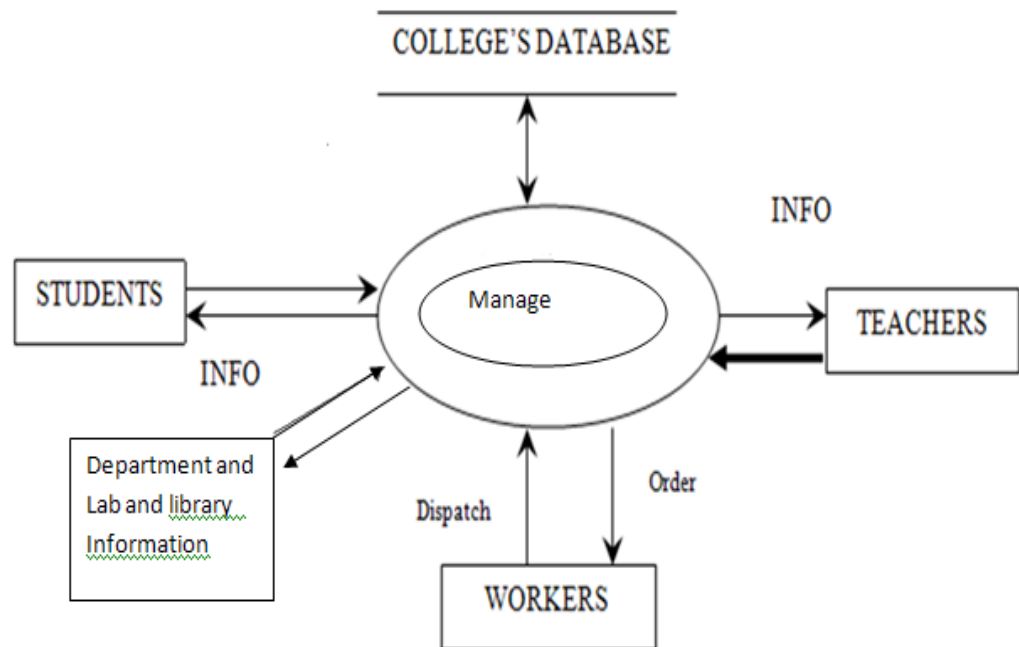
Abstract view of CMS

3.7..Data flow diagrams:

The whole architectural structure stems from the original flow design. Below are the Level 0 Data Flow Diagrams (**DFD**).. The diagrams below more accurately portray the data

flow through our system. These diagrams take precedence over the diagrams in the requirements document.

Level 0:



TESTING

Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include, but are not limited to the process of executing a program or application with the intent of finding software bugs (errors or other defects).

Software testing can be stated as the process of validating and verifying that a computer program/application/product:

- meets the requirements that guided its design and development,
- works as expected,
- can be implemented with the same characteristics,
- and satisfies the needs of stakeholders.

Software testing, depending on the testing method employed, can be implemented at any time in the software development process. Traditionally most of the test effort occurs after the requirements have been defined and the coding process has been completed, but in the Agile approaches most of the test effort is on-going. As such, the methodology of the test is governed by the chosen software development methodology

Software testing methods are traditionally divided into white- and black-box testing. These two approaches are used to describe the point of view that a test engineer takes when designing test cases.

White-box testing (also known as clear box testing, glass box testing, transparent box testing and structural testing) tests internal structures or workings of a program, as opposed to the functionality exposed to the end-user. In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases. The tester chooses inputs to exercise paths through the code and determine the appropriate outputs. This is analogous to testing nodes in a circuit, e.g. in-circuit testing (ICT).

While white-box testing can be applied at the unit, integration and system levels of the software testing process, it is usually done at the unit level. It can test paths within a unit, paths between units during integration, and between subsystems during a system-level test. Though this method of test design can uncover many errors or problems, it might not detect unimplemented parts of the specification or missing requirements.

Black-box testing treats the software as a "black box", examining functionality without any knowledge of internal implementation. The tester is only aware of what the software is

supposed to do, not how it does it.^[23] Black-box testing methods include: equivalence partitioning, boundary value analysis, all-pairs testing, state transition tables, decision table testing, fuzz testing, model-based testing, use case testing, exploratory testing and specification-based testing.

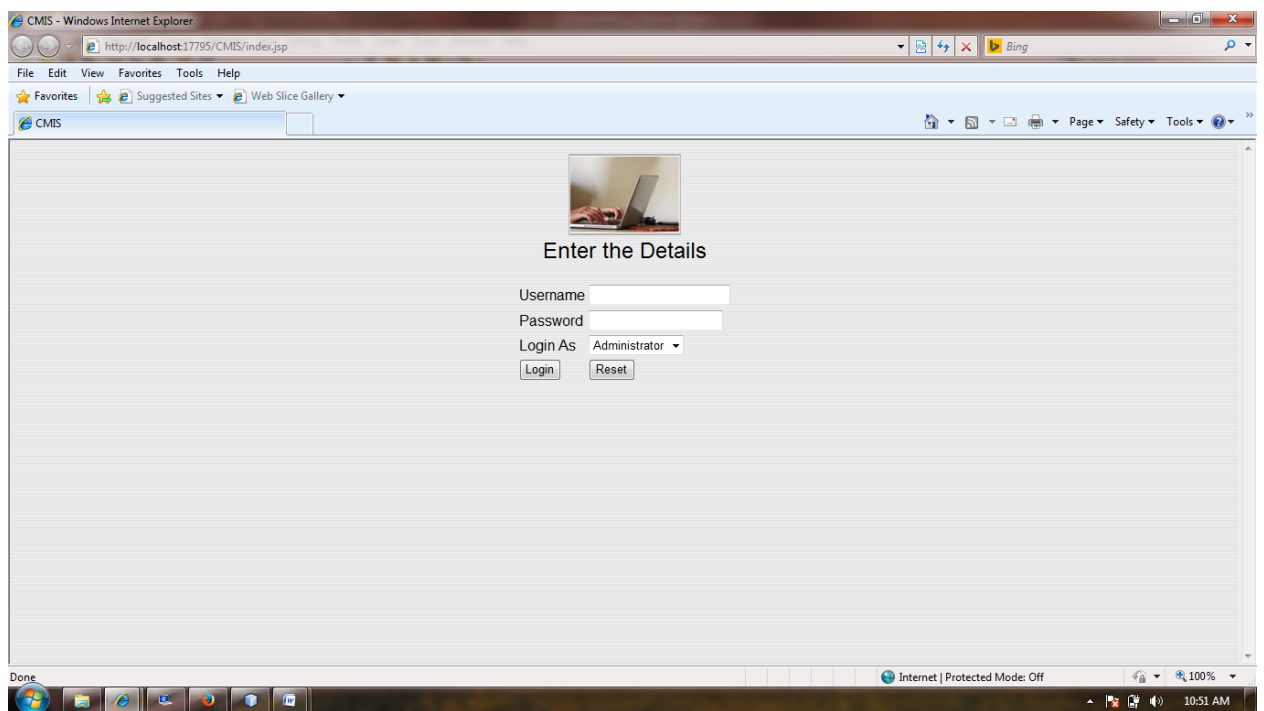
Specification-based testing aims to test the functionality of software according to the applicable requirements. This level of testing usually requires thorough test cases to be provided to the tester, who then can simply verify that for a given input, the output value (or behavior), either "is" or "is not" the same as the expected value specified in the test case. Test cases are built around specifications and requirements, i.e., what the application is supposed to do. It uses external descriptions of the software, including specifications, requirements, and designs to derive test cases. These tests can be functional or non-functional, though usually functional.

Specification-based testing may be necessary to assure correct functionality, but it is insufficient to guard against complex or high-risk situations.

One advantage of the black box technique is that no programming knowledge is required. Whatever biases the programmers may have had, the tester likely has a different set and may emphasize different areas of functionality. On the other hand, black-box testing has been said to be "like a walk in a dark labyrinth without a flashlight." Because they do not examine the source code, there are situations when a tester writes many test cases to check something that could have been tested by only one test case, or leaves some parts of the program untested.

This method of test can be applied to all levels of software testing: unit, integration, system and acceptance. It typically comprises most if not all testing at higher levels, but can also dominate unit testing as well

SCREEN-SHOTS



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Username

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Login As Administrator ▾

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Fill the following fields to Proceed

First Name

Middle Name

Surname

Phone Number

Date of Birth Year month

e-mail

Country

Gender
☐ Male
☐ Female

Your Address

Suggestion

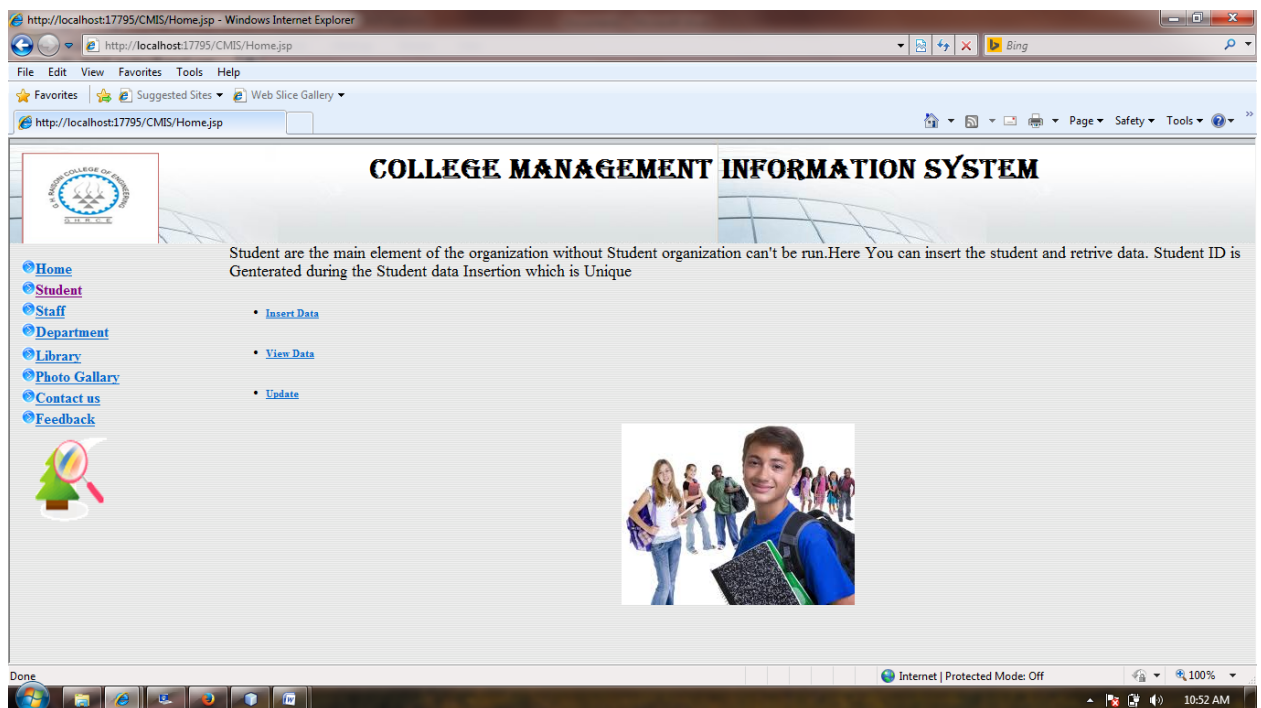
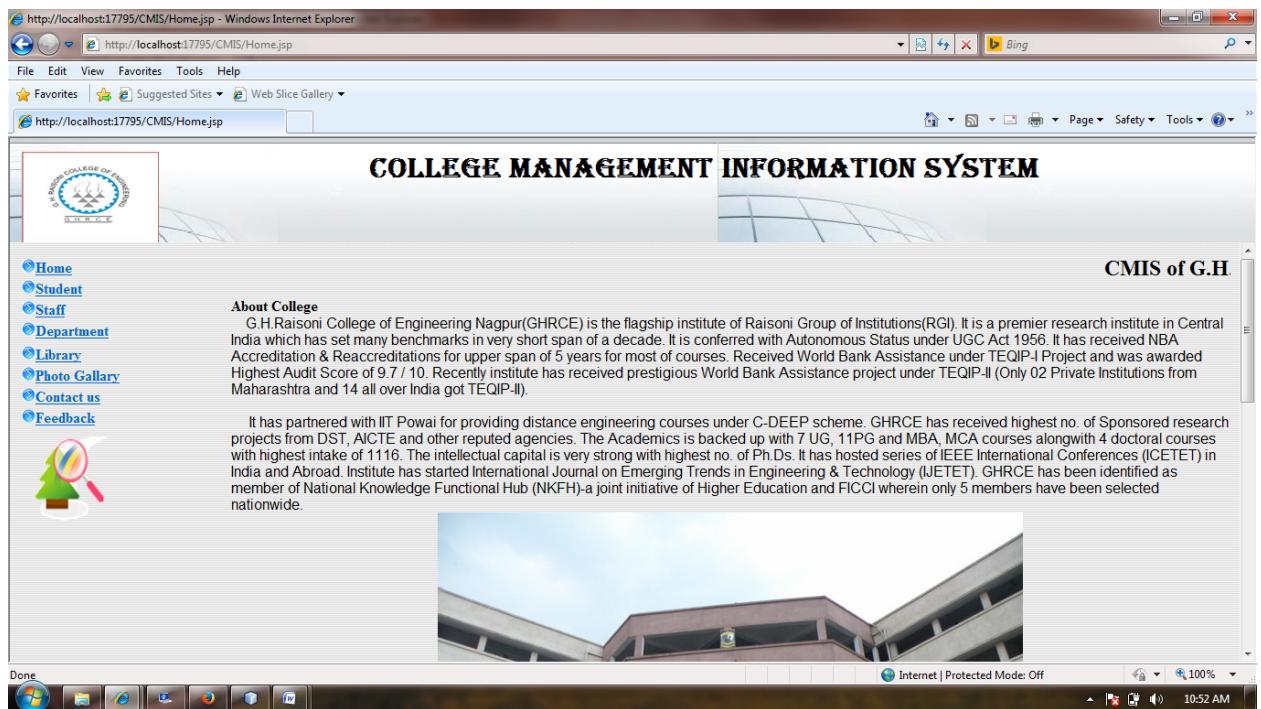


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on 14/02/2014

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First Name :
 Last Name :
 Sex : ☐ Male ☐ Female
 Phone Number :
 Date of Birth : date Year month
 Caste : SC
 Branch : CSE
 Semester : Sem 1
 H.NO :
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 Locality :
 City : Amravati
 State : Maharashtra
 Country : India
 ZipCode :

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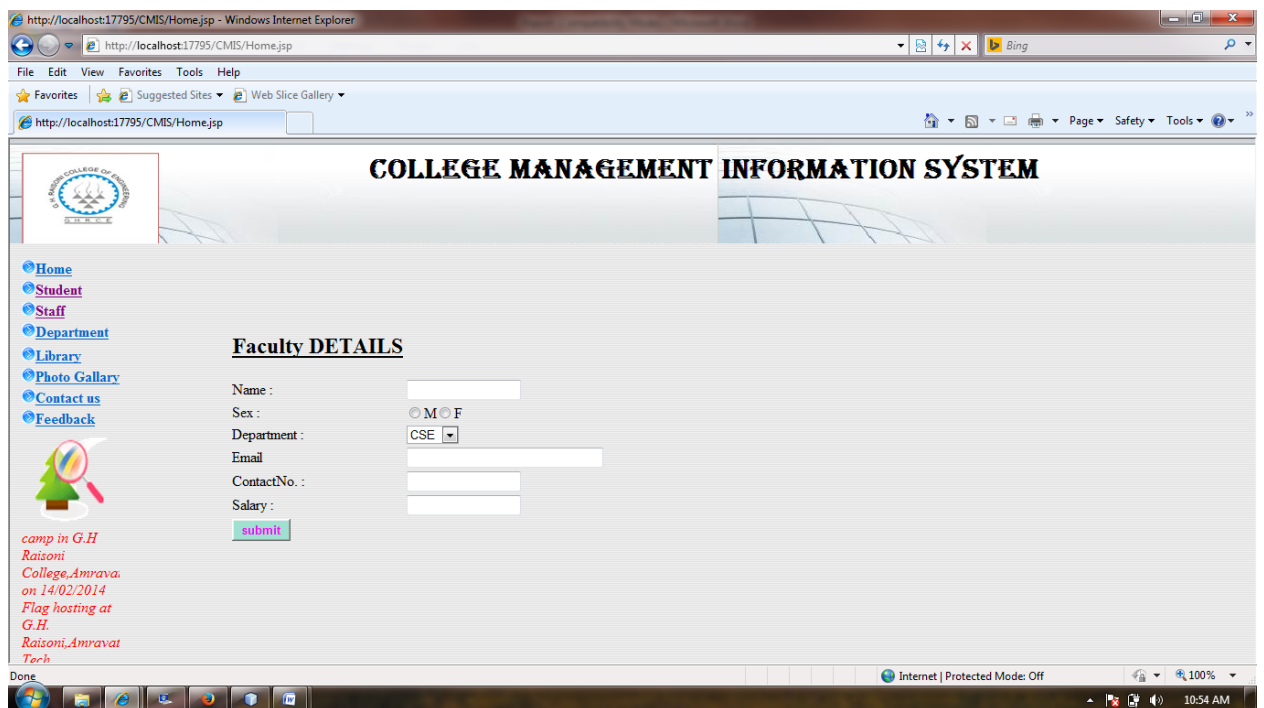
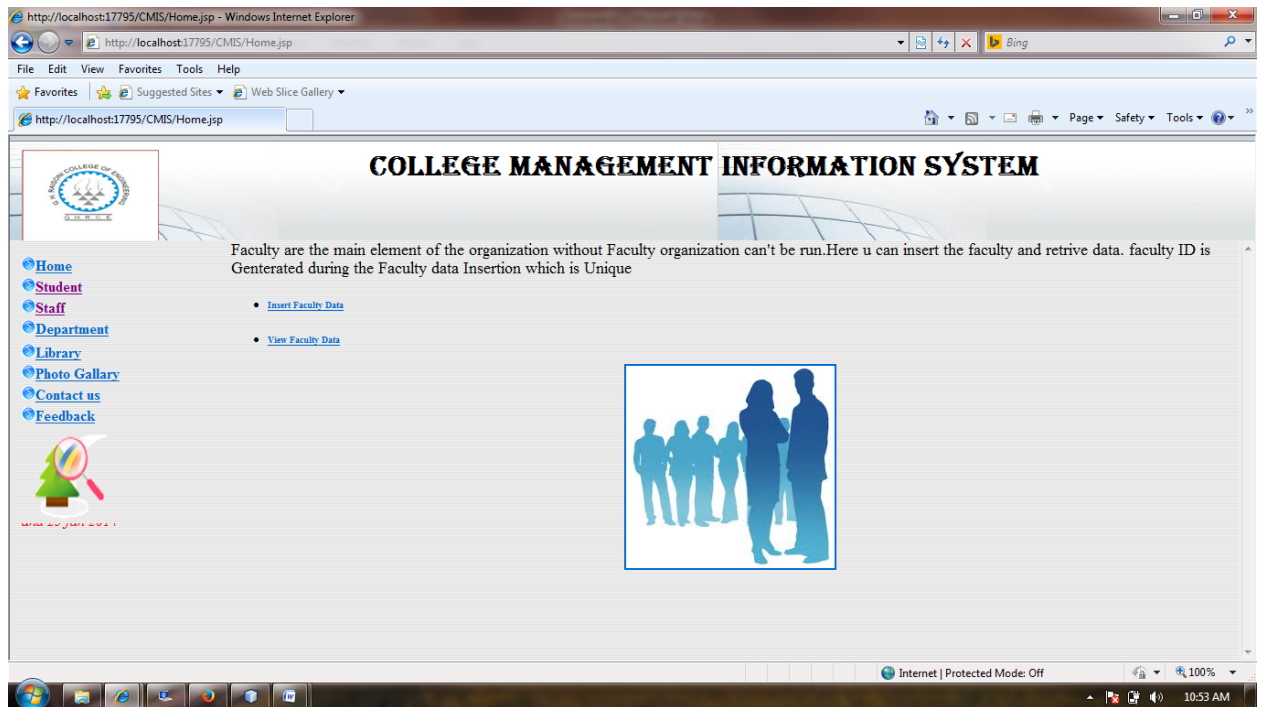
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ID	FirstName	LastName	Sex	Phone Numbe	Date of Birth	Caste	Branch	Semester	H.NO	E-MAIL	Locality	City	State	Country	ZipCod
14	null	wajire	male	9657633373	09	ST	CSE	Sem6	32,Telphone colony,akola	sagarwajire123@gmail.com	indian	Akola	Maharashtra	India	444001
15	null	chavhan	male	9689559365	09/03/1995	vj	cse	sem6	null	null	null	null	null	null	null
17	null	pawar	male	9604832982	18	Other	CSE	Sem6		rajatpawar@gmail.com	indian	Yavatmal	Maharashtra	India	445244
18	manoj	baisquad	male	965821456	25	ST	EXTC	Sem2	Hardha	maon@gmail.com	indian	Amravati	Maharashtra	India	652145

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ID	Name	Sex	Department	E-MAIL	Contact Number	Salary
4	Mangesh Nichat	CSE	male	mangesh.nichat@raisoni.net	8565245892	22000
5	Pv Ingole	EXTC	male	pv@raisoni.net	9748521522	300000
6	priya lodha	IT	female	priya@raisoni.net	0312541252	20000

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Department Name

1. Computer Science Department
2. Information Technology Department
3. Mechanical Department
4. Civil Department
5. Electronic Department
6. Electrical Engineering

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computer science & engineering from the year 2012 – 13 with the intake of 24 in each TWO shifts. The computer science & engineering departments aspire to disseminate latest knowledge in the field to the students. Our competent faculty members helps students in identification of latest project & learn how to solve them to learn necessary skills in this filed.

The HOD of the department computer science Department and Information Technology is Amit Gaikwad. The faculties of HOD departments are as follows :

Mangesh Nichat
Suraj Dhole
Priya Lodha
Swapnil Raut
Priti Kuralkar

The Laboratories Established in the Departments are:

1. Web-Tech Laboratory
2. DBMS Laboratory
3. Linux Laboratory
4. Project & Research Laboratory
5. Software Engineering Laboratory
6. DSP Laboratory
7. System Software Laboratory
8. Computer Graphics & Multimedia Laboratory
9. Computer Application Laboratory
10. Object Oriented & Modeling Laboratory
11. Data Structure Laboratory



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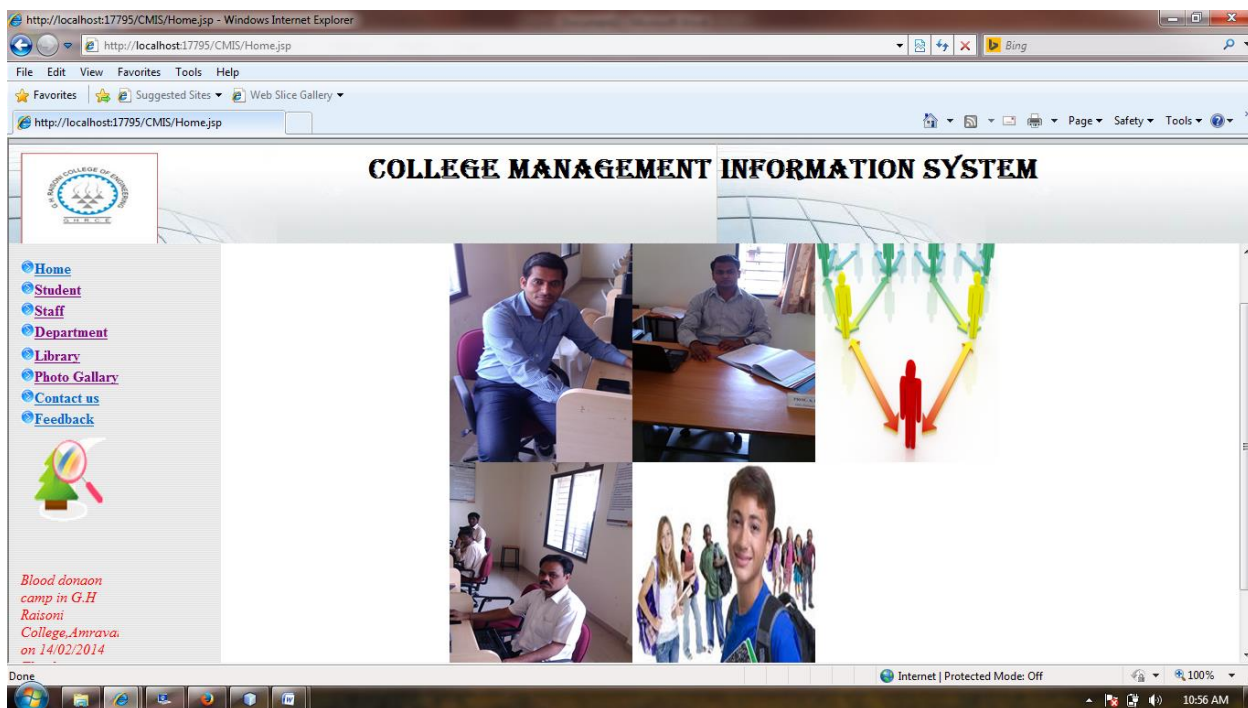
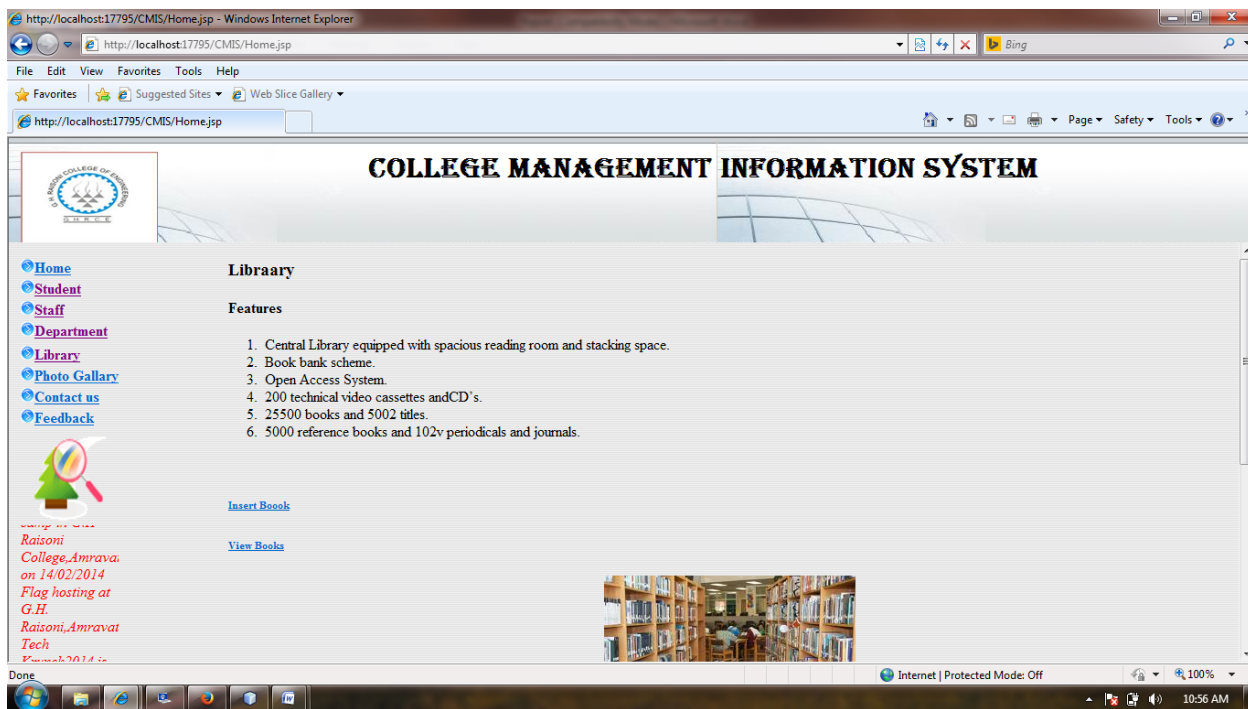
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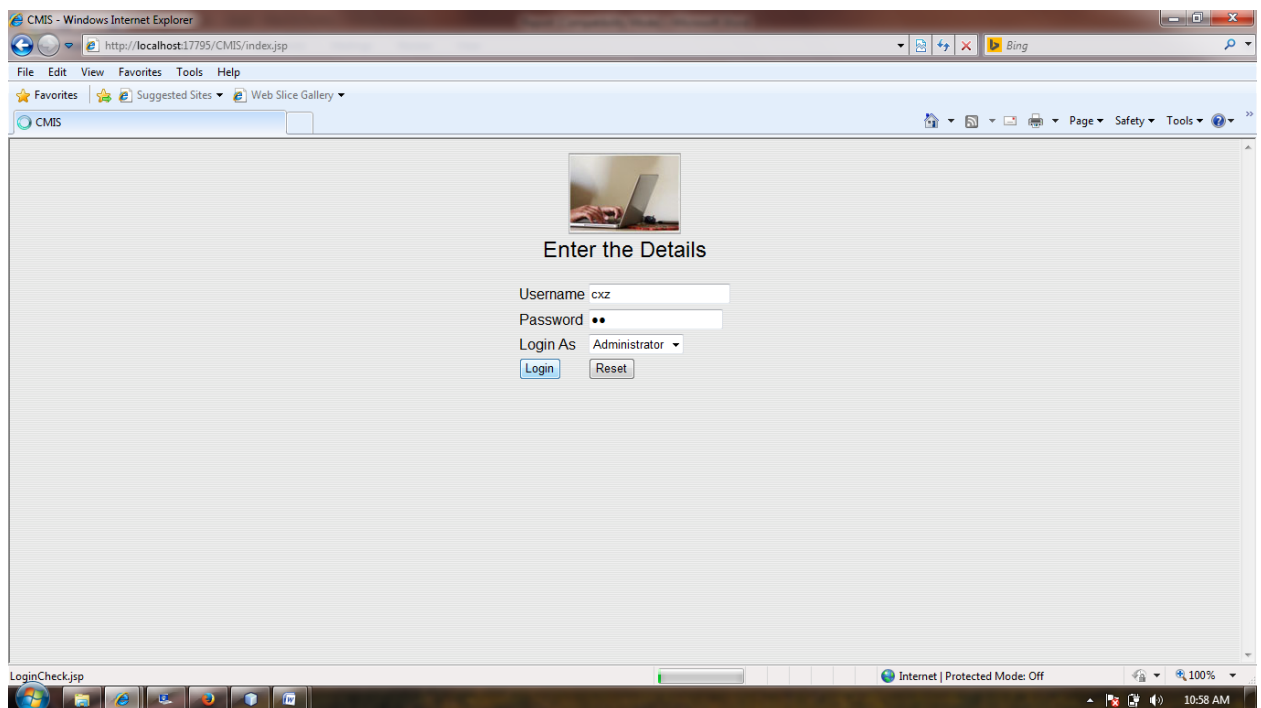
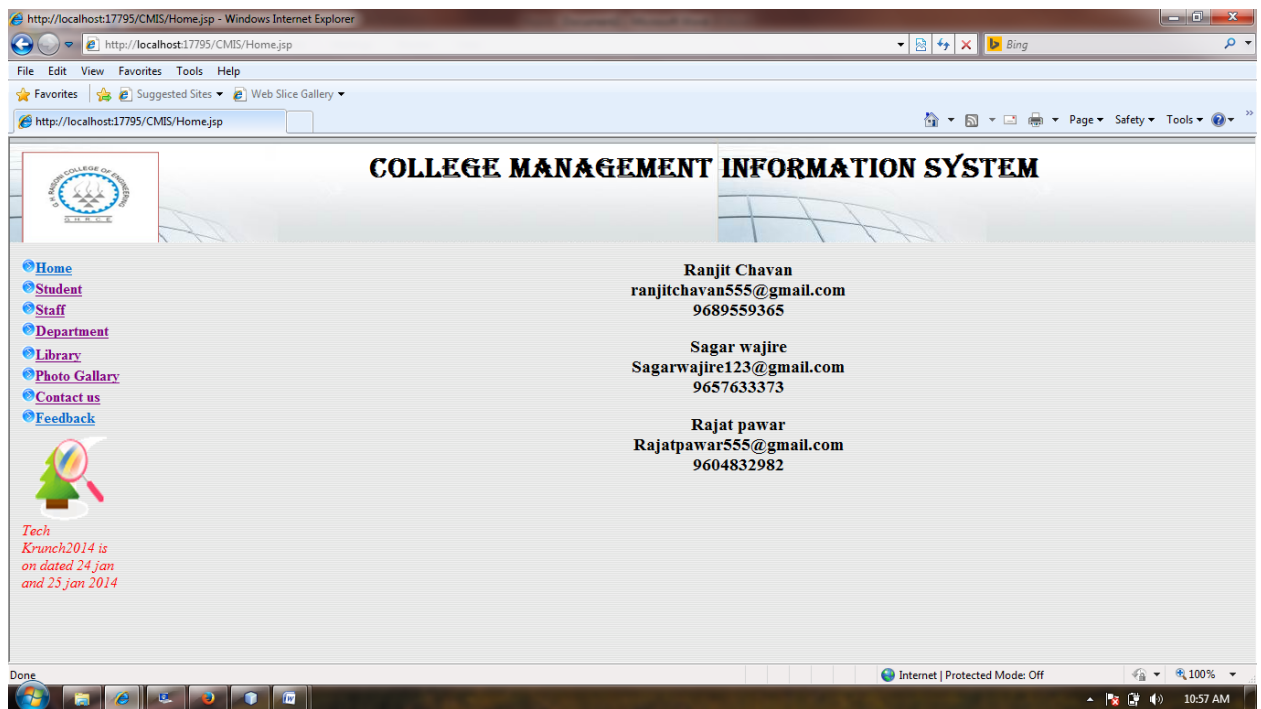
The Lab name is Database Management System. The lab Incharge is Prof. Mangesh Nichat.

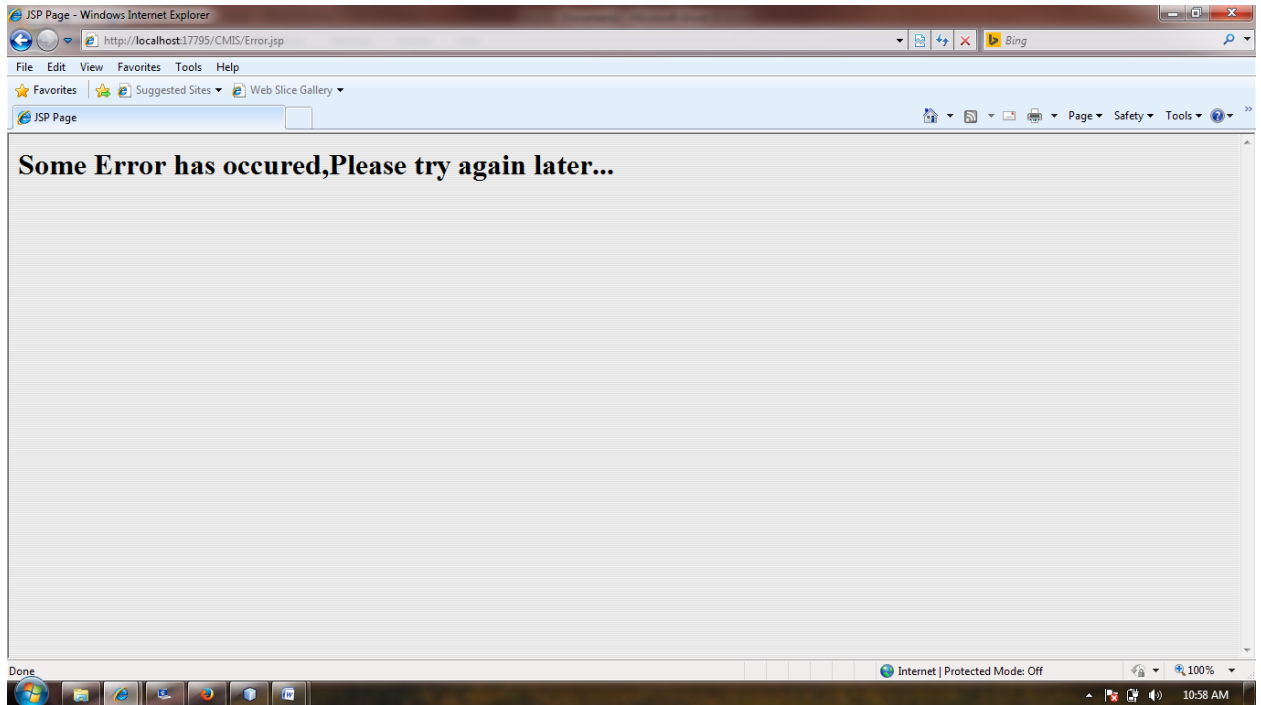
The department has well equipped, well ventilated and furnished laboratory facilities complete with modern desktop environments with internet connections, providing a pleasant working environment for students to undertake their practical and assignment work. Labs are equipped with advanced systems of Dell and Acer with configuration of Intel Core Quad 2.33GHz, 1GB Ram, 160 GB HDD, DVD Writer and 17" inch TFT monitor. The department has Computer Center, Web-Tech laboratory, Linux laboratory, Programming laboratory, Hardware laboratory, DSP laboratory and Artificial Intelligence laboratory. A proposal for a research lab has been submitted to enable post graduate level studies.



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CONCLUSION:

The project entitled as **College Management Information System** is the system that deals with the issues related to a particular institution.

- This project is successfully implemented with all the features mentioned in system requirements specification.
- The application provides appropriate information to users according to the chosen service.
- The project is designed keeping in view the day to day problems faced by a college.
- Deployment of our application will certainly help the college to reduce unnecessary wastage of time in personally going to each department for some information.

Awareness and right information about any college is essential for both the development of student as well as faculty. So this serves the right purpose in achieving the desired requirements of both the communities.

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